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EXAMINER

KURTZ, BENJAMIN M

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/762,095	<b>Applicant(s)</b> SCHIPPER, AARON	
	<b>Examiner</b> BENJAMIN KURTZ	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5,21-47,49-57 and 59-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,21-47,49-57 and 59-62 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

Claims 1, 5, 21-47, 49-57 and 59-62 are pending, claims 2-4, 6-20, 48 and 58 are canceled and claims 21, 24, 36, 60 and 61 are currently amended.

### ***Specification***

1. The amendment filed 8/29/07 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: paragraph [0015] has been amended to state that the inlet is devoid of flow restrictions. This limitation was not previously part of the written description and this feature has not been presented as being in the possession of the inventor at the time of invention.

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 43, 49 and 53 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 43, 49 and 53 the specification does not indicate the outlet being substantially devoid of flow restrictions. The addition of a flow restrictor to the outlet is not precluded by the description and the description does not provide support for this negative limitation.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 21, 24, 49, 50, 60 and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by Williamson et al. US 5 443 724.**

Regarding claim 21, Williamson teaches an apparatus comprising: a shell (12) having an inlet (14), an outlet (24) and an inner cavity in fluid communication with each of the inlet and the outlet, the inner cavity having a direct flow path space positioned

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directly between the inlet and outlet, and a plurality of tubes (20) positioned within the inner cavity of the shell such that the tubes are oriented substantially parallel to each other and upper ends of the tubes being positioned above the inlet, each of the tubes having a longitudinal axis, and at least one of the tubes having a surface with a plurality of apertures, a minority portion of the plurality of tubes being positioned in the direct flow path space the flow of fluid flowing directly across the minority portion of the plurality of tubes in a substantially radial direction, a majority portion of the plurality of tubes being larger than the minority portion of the plurality of tubes and positioned outside of the direct flow path space, and an air vent (34) (fig. 4, col. 13, lines 49-52).

Regarding claims 24, 49 and 50, Williamson further teaches the shell further comprises a bottom section including an aperture (the tube on the lower right hand side of figure 4 adjacent (18) and (20)) (fig. 4); the outlet is substantially devoid of flow restrictions (fig. 4); the inlet has a minimum cross-sectional area of flow and the outlet has a minimum cross-sectional area of flow that is substantially equal to the minimum cross-sectional area of flow of the inlet (fig. 4).

Regarding claims 60 and 61, Williamson further teaches a first segment of the majority portion of the plurality of tubes is positioned below the direct flow path space and the first segment is larger than the minority portion of the plurality of tubes (fig. 4); and a second segment of the majority portion of the plurality of tubes is positioned above the direct flow path space across the direct flow path space from the first segment and the second segment is larger than the minority portion of the plurality of tubes (fig. 4).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**4. Claims 1, 27-29, 31-35, 43-45, 51, 52 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDuff US 6 893 485 in view of Elmi US 5 500 132 and Muller US 4 443 346.**

Regarding claim 1, MacDuff teaches an apparatus for removing air or debris from a flow of liquid, the apparatus comprising: a shell (40) having an inlet (40c), and outlet (40b), and an inner cavity in fluid communication with each of the inlet and outlet, and an elongate coalescing medium assembly (17) disposed within the cavity of the shell the assembly having a wire mesh tube having ends, a longitudinal axis extending between the ends and a side wall extending between the ends the flow of liquid is directed to travel in a radial direction across the wire mesh tubes (fig. 3, col. 4, lines 10-25) MacDuff does not teach the coalescing medium assembly including a plurality of wire mesh tubes of a core element having greater rigidity.

Elmi teaches a coalescing medium assembly including a plurality of perforated tubes oriented substantially parallel to each other with a core element (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made

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to use the plurality of tubes as taught by Elmi because multiple tubes provides for the lighter material that did not coalesce on the first tube to contact subsequent tubes (col. 4, lines 34-43). Elmi does not teach the core element having a rigidity greater than the other tubes of the assembly.

Muller teaches an elongate core element (5) contacting a plurality of tubes and oriented substantially parallel to the plurality of tubes, the elongated core element having a rigidity greater than the wire mesh tubes (fig. 1 and 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the assemblies with the teachings of Muller (346) because the central tube serves for supporting the filter tubes (col. 2, line 48).

Regarding claims 27, 43 and 44, MacDuff further teaches the ends of each wire mesh tube are positioned at first and second longitudinal positions along the longitudinal axis, and the outlet has a longitudinal position between the first and second longitudinal positions of the ends (fig. 3); the outlet is substantially devoid of flow restrictions (fig. 3); and the inlet has a minimum cross-sectional area of flow and the outlet has a minimum cross-sectional area of flow that is substantially equal to the minimum cross-sectional area of flow of the inlet (fig. 3).

Regarding claim 45, MacDuff teaches the inner cavity of the shell has an interior diameter (fig. 3). Elmi teaches a plurality of coalescing tubes each having a diameter (fig. 2). The combination of the plurality coalescing tubes of Elmi within the shell of MacDuff would inherently have the diameters of the plurality of tubes be less than the interior diameter of the shell in order for the plurality of tubes to fit.

Regarding claims 28 and 29, Elmi further teaches the coalescing medium assembly further includes a coupling element (the cubic frame) that surrounds and holds together the plurality of tubes (fig. 2); and Elmi further teaches the coalescing medium assembly includes a band wrapped around the coupling element and holding the coupling element in engagement with the plurality of wire mesh tubes (fig. 2).

Regarding claims 46 and 47, how the flow of fluid enters the wire mesh is a process step and does not further structurally limit the apparatus; the velocity of the flow of fluid being greater at the inlet than in the shell is also a process step and does not further structurally limit the apparatus.

Regarding claim 62, Mere duplication of parts has no patentable significance unless a new and unexpected result is produced, *In re Harza*, 124 USPQ 378 (1960). Providing more coalescing medium assemblies would provide a greater surface area for the coalescing of air and for greater filtration which is a predictable result and obvious to one of ordinary skill in the art.

Regarding claim 31, MacDuff teaches an apparatus for removing air or debris from a flow of liquid, the apparatus comprising: a shell (40) having an inlet, and outlet, and an inner cavity in fluid communication with the inlet and the outlet, and one elongate coalescing medium assembly (17) disposed within the inner cavity of the shell, the coalescing medium assembly including: an elongate core element. MacDuff does not teach a plurality of wire mesh tubes.

Elmi teaches a plurality of tubes having a longitudinal axis, the tubes cooperating to define an interior space therebetween, and an elongate core element being



positioned with the interior space oriented substantially parallel to the plurality of tubes (the center tube is the elongate core element) (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plurality of tubes as taught by Elmi because multiple tubes provides for the lighter material that did not coalesce on the first tube to contact subsequent tubes (col. 4, lines 34-43). Elmi does not teach the core element having a rigidity greater than the other tubes of the assembly.

Muller teaches an elongate core element (5) contacting a plurality of tubes and oriented substantially parallel to the plurality of tubes, the elongated core element having a rigidity greater than the wire mesh tubes (fig. 1 and 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the assemblies with the teachings of Muller (346) because the central tube serves for supporting the filter tubes (col. 2, line 48).

Regarding claims 32 and 33, MacDuff further teaches an end cap (the upper part of (40)) including a recess where an end of the elongate core element is received in the recess (fig. 3); and MacDuff and Elmi teach the elongate core element comprises a cylindrical tube (fig. 2, both references).

Regarding claim 34, Elmi teaches the plurality of tubes but does not teach the tubes arranged in a substantially circular pattern when viewed along the longitudinal axis. It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the tubes in a circular pattern so the plurality of tubes will better fit within the shell as taught by MacDuff having a circular shape. Arranging

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the tubes in a circular pattern is a mere change in configuration. The configuration of the apparatus is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration is significant, *In re Dailey*, 149 USPQ 47 (1966). The configuration is considered obvious absent some secondary evidence.

Regarding claim 35, MacDuff further teaches the wire mesh tube having substantially horizontal wires and interconnected substantially vertical wires (fig. 2).

Regarding claim 51, MacDuff teaches the inner cavity of the shell has an interior diameter (fig. 3). Elmi teaches a plurality of coalescing tubes each having a diameter (fig. 2). The combination of the plurality coalescing tubes of Elmi within the shell of MacDuff would inherently have the diameters of the plurality of tubes be less than the interior diameter of the shell in order for the plurality of tubes to fit.

Regarding claim 52, how the flow of fluid enters the wire mesh is a process step and does not further structurally limit the apparatus.

**5. Claims 36-38, 41, 42, 53-57 and 59 rejected under 35 U.S.C. 103(a) as being unpatentable over MacDuff '485 in view of Elmi '132 and Schwartz et al. US 5 676 740.**

Regarding claim 36, MacDuff teaches an apparatus for removing air or debris from a flow of liquid, the apparatus comprising: a shell (40) having an inlet, and outlet, and an inner cavity in fluid communication with the inlet and the outlet, and one

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elongate coalescing medium assembly (17) disposed within the inner cavity of the shell, the assembly comprising a wire mesh tube having a longitudinal axis, where the flow of liquid flows in a direction substantially transverse to the longitudinal axis of the mesh tube (fig. 3). MacDuff does not teach a plurality of wire mesh tubes or a wire mesh retaining wall.

Elmi teaches a plurality of tubes oriented substantially parallel to each other, each tube having a longitudinal axis extending between the ends (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plurality of tubes as taught by Elmi because multiple tubes provides for the lighter material that did not coalesce on the first tube to contact subsequent tubes (col. 4, lines 34-43). The addition of more tubes would also be obvious because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007). The addition of more tubes provides more contact area for the fluid flowing through the apparatus and would have been within the technical grasp of one of ordinary skill in the art.

Schwartz teaches an apparatus for removing air or debris from a liquid having a coalescing medium (38) surrounded by a retaining wall (40) (fig. 1, 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the retaining wall surrounding the coalescing medium assembly as taught by Schwartz because it diffuses and distributes the housing admitted liquid giving the assembly a

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superior performance, supports the coalescing medium and provides for efficient gas removal at significantly higher liquid flow rates (col. 2, lines 9-13, lines 33-35). Using a wire mesh in place of the perforated sleeve of Schwartz is an obvious structural equivalent.

Regarding claims 37 and 38, MacDuff further teaches the ends of the wire mesh tube is positioned at first and second longitudinal positions along the longitudinal axis, and the outlet has a longitudinal position between the first and second longitudinal positions of the ends (fig. 3); and an air vent positioned above the tube (fig. 3).

Regarding claim 41, Elmi teaches the plurality of coalescing tubes comprising at least one elongate core element oriented substantially parallel to the plurality of tubes (the tube at the center of the bundle (fig. 2)).

Regarding claim 42, MacDuff further teaches the wire mesh tube includes a sidewall extending between the ends and the liquid enters and exits the sidewalls while passing through the wire mesh (fig. 3).

Regarding claim 53 and 54, MacDuff further teaches the outlet is substantially devoid of flow restrictions (fig. 3); and the inlet has a minimum cross-sectional area of flow and the outlet has a minimum cross-sectional area of flow that is substantially equal to the minimum cross-sectional area of flow of the inlet (fig. 3).

Regarding claim 55, MacDuff teaches the inner cavity of the shell has an interior diameter (fig. 3). Elmi teaches a plurality of coalescing tubes each having a diameter (fig. 2). The combination of the plurality coalescing tubes of Elmi within the shell of

MacDuff would inherently have the diameters of the plurality of tubes be less than the interior diameter of the shell in order for the plurality of tubes to fit.

Regarding claims 56 and 57, how the flow of fluid enters the wire mesh is a process step and does not further structurally limit the apparatus; the velocity of the flow of fluid being greater at the inlet than in the shell is also a process step and does not further structurally limit the apparatus.

Regarding claim 59, MacDuff teaches a wire mesh tube includes a plurality of openings but does not teach the size of the openings. Elmi teaches opening in the tubes being 0.25 inches (col. 4, lines 45-52). [W]here the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, *Gardner v. TEC Systems, Inc.*, 220 USPQ 777 (1984).

**6. Claims 21-23, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDuff '485 in view of Elmi '132 and Kuster et al. US 5 490 874 or Mannion et al. US 3 668 822.**

Regarding claim 21, MacDuff teaches an apparatus for removing air or debris from a flow of liquid, the apparatus comprising: a shell (40) having an inlet, an outlet, and an inner cavity in fluid communication with each of the inlet and the outlet, and a tube positioned within the inner cavity of the shell, the tube having a longitudinal axis

having a surface with a plurality of apertures and an air vent (28) positioned to release air that is removed from the flow of liquid by the tube (fig. 3). MacDuff does not teach a plurality of tubes in the cavity of the shell or a minority portion of the tube positioned in a direct flow path.

Elmi teaches a plurality of tubes oriented substantially parallel to each other, each tube having a longitudinal axis and the tubes having a surface with a plurality of apertures (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plurality of tubes as taught by Elmi because multiple tubes provides for the lighter material that did not coalesce on the first tube to contact subsequent tubes (col. 4, lines 34-43). The addition of more tubes would also be obvious because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007). The addition of more tubes provides more contact area for the fluid flowing through the apparatus and would have been within the technical grasp of one of ordinary skill in the art.

While MacDuff teaches part of the coalescing medium assembly is in the direct flow path MacDuff does not teach a minority portion of the medium assembly being in the direct flow path. Having a minority portion of the coalescing medium assembly in the direct flow path is a change in dimension, wherein either the coalescing medium is lengthened along its longitudinal axis or the inlet and outlet openings are made smaller in diameter. [W]here the only difference between the prior art and the claims was a

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recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, *Gardner v. TEC Systems, Inc.*, 220 USPQ 777 (1984). Furthermore, Kuster '874 and Mannion '822 both teach a minority portion of a coalescing medium being located in the direct flow path.

Regarding claims 22, 23, 49 and 50, MacDuff further teaches the flow of liquid flows into and out of the tubes in a direction substantially transverse to the longitudinal axis of the tube (fig. 3); the air vent is positioned above the tube (fig. 3); the outlet is substantially devoid of flow restrictions (fig. 3); and the inlet has a minimum cross-sectional area of flow and the outlet has a minimum cross-sectional area of flow that is substantially equal to the minimum cross-sectional area of flow of the inlet (fig. 3).

**7. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDuff '485 in view of Elmi '132 and Mannion '822.**

Regarding claims 24 and 25, Mannion further teaches a coalescing apparatus having a bottom section including an aperture and a bottom section (45) removably attached to the shell (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the aperture and bottom section of Mannion because the structure provides a means for cleaning out any sediment collected within the apparatus (col. 3, lines 56-72).

Regarding claim 26, Mannion further teaches a coalescing apparatus having a bottom section including a valve (45) (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the valve of Mannion because the structure provides a means for cleaning out any sediment collected within the apparatus (col. 3, lines 56-72).

**8. Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDuff '485 in view of Elmi '132 and Schwartz '740 and further in view of Mannion '822.**

Regarding claim 39, MacDuff in view of Elmi and Schwarz teaches the apparatus of claim 36 but does not teach the shell comprising a bottom section that is removably attached to the shell. Mannion teaches a coalescing apparatus having a bottom section including an aperture and a bottom section (45) removably attached to the shell (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the aperture and bottom section of Mannion because the structure provides a means for cleaning out any sediment collected within the apparatus (col. 3, lines 56-72).

Regarding claim 40, MacDuff in view of Elmi and Schwartz teaches the apparatus of claim 36 but does not teach the shell further comprising a valve. Mannion teaches a coalescing apparatus having a bottom section including a valve (45) (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention



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was made to use the valve of Mannion because the structure provides a means for cleaning out any sediment collected within the apparatus (col. 3, lines 56-72).

**9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacDuff '485 in view of Elmi '132' and Muller '346 as applied to claim 1 above, and further in view of Blace US 4 051 033.**

MacDuff in view of Elmi and Muller teaches the apparatus of claim 1 but does not teach an end cap including a plurality of recesses. Blace teaches an end cap (16) including a plurality of recesses (formed by member (94), fig. 9 and 10, col. 4, lines 28-34, col. 5, lines 15-20) each member (10) being received in a recess. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the end cap of Blace because the end cap secures the tube in place (col. 4, lines 28-34, col. 5, lines 15-20).

**10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacDuff '485 in view of Elmi '132 and Muller '346 as applied to claim 1 above, and further in view of Basse et al. US 4 985 182.**

MacDuff in view of Elmi and Muller teaches the apparatus of claim 1 but does not teach a wire mesh tube including a wire mesh projection extending from an inner surface of the tube. Basse teaches a wire mesh tube (10) including a projection (16)

extending from an inner surface of the tube (10) and into an interior of the tube (10) (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the projection (16) of Basse (182) because the projections define flow paths making good ventilation in the cross and longitudinal directions (col. 1, lines 62-66). Basse teaches the projection (16) may be provided with perforations (col. 4, lines 25-26). Making the projection of a wire mesh would be an obvious structural equivalent.

### ***Response to Arguments***

Applicant's arguments filed 4/3/08 have been fully considered but they are not persuasive.

Regarding applicant's submitted declaration under 37 C.F.R. §1.131, claims 43, 49 and 53 remain rejected under 35 U.S.C. § 112 first paragraph. Applicant submits that an object of the present invention is to have minimal impact on the rate of fluid flow through the inlet and the outlet. The specification, as originally filed, does not state this objective or any other indication that the inlet and outlet should be free of any flow restrictions. Applicant also submits that the device of Elmi is intended for liquid/liquid separation and coalescing and because of this it would be difficult to predict if the same results would carry over to air/liquid separation. However, the addition of more tubes, as taught for instance in Elmi, would have been within the technical grasp of one of ordinary skill in the art and it would have been obvious to try such a configuration based on the knowledge of one of ordinary skill in the art. Applicant also states the claimed

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device provides unexpected results. Applicant has not provided sufficient evidence of unexpected results. The applicant has not provided any data showing unexpected results or what claimed features of the invention provide for any unexpected results. Applicant also submits the claimed wire mesh retaining wall is not an obvious structural equivalent to element (40) of Schwartz. Schwarz describes the element (40) as a cylindrical sleeve having a multiplicity of holes formed therein. This definition would encompass a wire mesh screen in structure and it is therefore deemed to be an obvious structural equivalent. The sleeve (40) of Schwartz further provides support to the coalescing unit contained therein providing further motivation to use such a structure. Applicant further states the sleeve (40) of Schwartz would restrict the flow of fluid around the perimeter of the coalescing unit. However, Schwartz does not indicate flow is impeded by the element (40) and states instead the element (40) provides for efficient gas removal at significantly higher liquid flow rates (col. 2, lines 33-35).

Regarding applicant's arguments with regard the combination of MacDuff and Elmi, applicant argues the system of MacDuff is a multiple pass system and the system of Elmi is a single pass system and it would therefore not be obvious to combine the teachings of these references. The addition of multiple tubes, as taught by Elmi, would make the MacDuff system more efficient, thereby providing motivation to combine. Also, having a multiple pass or single pass system is a process limitation and is an intended use of the apparatus. Applicant also argues that MacDuff teaches a multiply wrapped mesh screen and therefore, adding more tubes would provide no additional benefit. However, Elmi teaches the additional tubes provide more contact area,

therefore the addition of more tubes, and therefore more contact area would be advantageous as taught by Elmi.

Regarding the Muller reference, it is known in the filter art, as shown in Muller that using support tubes is known to provide further structural integrity to a group of filters. The concept of a central tube providing support would have been an obvious to one of ordinary skill in the art as the application of the concept of a support tube providing support for surrounding filters is an application of prior knowledge in a predictable manner. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007). The filter cloth of Muller would be added as desired by one of ordinary skill in the art to provide some filtering capabilities for the system. Furthermore, one of ordinary skill in the art would recognize the central support tube need not be elongated within the apparatus of MacDuff, only the teaching of using a central support tube is taught and applied from the Muller reference as stated in the rejection.

Regarding claim 5, the plate (16) contains recesses securing the filter tubes as shown in figure 9 of Blace.

Regarding Basse, applicant argues that it is not proper to combine the teachings of Basse with the previously cited prior art. Basse pertains to a fluid flowing through perforated tubes, both in the longitudinal and radial directions. In looking to the concepts of fluid flow through such a system Basse provides for good ventilation in both the cross and longitudinal directions through such a tube. The tube of Basse is a mesh and the projections may be provided with perforations. As the tube itself is made of a mesh it would have been an obvious structural variation to use a mesh for the

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projections as well. How the mesh is made is a process step and is not a structural limitation to the apparatus.

Regarding claim 29, Elmi shows a band wrapped around the coupling element, the band being the strap wrapped around the middle of the cubic structure as shown in figure 2.

Regarding the use of the prior art of Mannion. Mannion teaches the system is not just a screen to capture particles but it also functions as an air-liquid separator as shown in column 3, lines 45-55 and is properly applied analogous prior art.

Regarding applicant's argument that providing a plurality of tubes would increase the expense of the system of MacDuff, the additional expense associated with more tubes would not discourage one of ordinary skill in the art from seeking the benefits of more tubes, (MPEP 2145 (VII)).

Regarding applicant argument pertaining to the level of skill in the art; the level of skill in the art is found within the prior art of record. MPEP 2141.03.

Applicant's arguments with respect to claims 21, 24, 49, 50, 60 and 61 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN KURTZ whose telephone number is (571)272-8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Benjamin Kurtz  
Examiner  
Art Unit 1797

4/30/08

/Krishnan S Menon/  
Primary Examiner, Art Unit 1797